Claims

1. A magnetic thin film disk comprising:

a circumferentially textured substrate structure;

a layer of CrTi deposited on the substrate;

a seed layer over the layer of CrTi;

an underlayer over the seed layer; and

at least one magnetic layer over the underlayer, the magnetic layer having an Mrt orientation ratio greater than one.

2. The magnetic thin film disk of claim 1 wherein the seed layer is RuAl.

3. The magnetic thin film disk of claim 2 wherein the circumferentially textured substrate structure is a circumferentially textured glass substrate.

4. The magnetic thin film disk of claim 2 wherein the circumferentially textured substrate structure is a circumferentially textured AlMg/NiP substrate.

5. The magnetic thin film disk of claim 1 wherein the CrTi layer has from 35 to 90 at.% Ti.

6. The magnetic thin film disk of claim 1 wherein the CrTi layer has approximately from 43 to 85 at.% Ti.

7. The magnetic thin film disk of claim 2 wherein the CrTi layer is amorphous or nanocrystalline.

8. The magnetic thin film disk of claim 7 wherein the CrTi is approximately from 10 to 100 nm thick.

9. The magnetic thin film disk of claim 2 wherein the circumferentially textured substrate structure has an R_q from 2 to 20 angstroms.

10. The magnetic thin film disk of claim 1 wherein the Mrt orientation ratio is greater than 1.1

11. A method of fabricating a magnetic thin film disk comprising the steps of:

depositing a thin film layer of CrTi on a circumferentially textured substrate;

depositing a thin film seed layer over the thin film layer of CrTi; and

depositing a plurality of thin film layers over the seed layer including at least one magnetic layer.

12. The method of claim 11 wherein the seed layer is RuAl.

13. The method of claim 12 wherein the seed layer of RuAl has a B2 crystallographic structure.

14. The method of claim 12 wherein the circumferentially textured substrate structure is a circumferentially textured glass substrate.

15. The method of claim 12 wherein the circumferentially textured substrate structure is a circumferentially textured AlMg/NiP substrate.

16. The method of claim 12 wherein the CrTi layer has from 35 to 90 at.% Ti.

17. The method of claim 12 wherein the CrTi layer has approximately from 43 to 85 at.% Ti.

18. The method of claim 11 wherein the CrTi layer is amorphous or nanocrystalline.

19. The method of claim 12 wherein the circumferentially textured substrate structure has an R_q from 2 to 20 angstroms.

20. The method of claim 12 wherein the Mrt orientation ratio is greater than 1.1

21. A disk drive comprising:

a magnetic transducer including a read and a write head;

a rotatable spindle; and

a magnetic thin film disk mounted on the rotatable spindle allowing magnetic transitions to be written and read on the magnetic thin film disk by the magnetic transducer, the magnetic thin film disk including a circumferentially textured substrate structure, including an amorphous or nanocrystalline pre-seed layer of CrTi with 35 to 90 at.% titanium, a seed layer on the pre-seed layer of CrTi, at least one underlayer on the seed layer, at least one magnetic layer above the underlayer and the magnetic thin film disk having an Mrt orientation ratio greater than one.

22. The disk drive of claim 21 wherein the seed layer is RuAl.

23. The disk drive of claim 22 wherein the circumferentially textured substrate structure has an R_q from 2 to 20 angstroms.

24. A method of manufacturing a thin film disk comprising the steps of:

fabricating a set of sample magnetic thin film disks having a pre-seed layer of CrTi on a circumferentially textured substrate structure, the set of sample magnetic thin film disks having various atomic percentages of titanium in the pre-seed layer;

measuring Mrt orientation ratios for the set of sample magnetic thin film disks;

selecting an atomic percentage of titanium for a CrTi pre-seed layer which corresponds to a selected Mrt orientation ratio; and

depositing a thin film of CrTi having the selected atomic percentage of titanium on a circumferentially textured substrate structure which corresponds to the selected Mrt orientation ratio;

depositing a seed layer over the layer of CrTi;

depositing a least one underlayer over the seed layer; and

depositing a least one magnetic layer over the underlayer.

25. A method of manufacturing a thin film disk comprising the steps of:

fabricating a set of sample magnetic thin film disks having a pre-seed layer of CrTi and a RuAl seed layer on a circumferentially textured substrate structure, the set of sample magnetic thin film disks having various thicknesses of the RuAl seed layer;

measuring Mrt orientation ratios for the set of sample magnetic thin film disks;

selecting a thickness for the RuAl seed layer which corresponds to a selected Mrt orientation ratio; and

depositing a thin film of CrTi as a pre-seed layer on a circumferentially textured substrate structure;

depositing a RuAl seed layer over the layer of CrTi to a thickness which corresponds to the selected Mrt orientation ratio;

depositing a least one underlayer over the RuAl seed layer; and

depositing a least one magnetic layer over the underlayer.